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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/965,292	09/27/2001	Bret S. Weber	01-221	3852

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LSI Logic Corporation
Corporate Legal Department
Intellectual Property Services Group
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EXAMINER
MEUCCI, MICHAEL D

ART UNIT	PAPER NUMBER
2142	

DATE MAILED: 04/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 January 2006*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☐ Some *   c)☐ None of:

         1.☐ Certified copies of the priority documents have been received.

         2.☐ Certified copies of the priority documents have been received in Application No. _____.

         3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   This action is in response to the request for reconsideration filed 18 January

2006.

2.   Claims 1-18 remain pending.

Response to Amendment

3.   Examiner acknowledges amendments made to claims 1 and 10 to overcome the

35 U.S.C. 112, second paragraph rejections. These rejections have been withdrawn.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 1, 5, 7, 10, 14, and 16 rejected under 35 U.S.C. 103(a) as being

unpatentable over Reshef et al. (U.S. 6,321,337 B1) hereinafter referred to as Reshef in

view of Pettey et al. (U.S. 6,594,712 B1) hereinafter referred to as Pettey.

a.   As per claims 1 and 10, Reshef teaches: preposting command buffers,

wherein the buffers contain external small computer system interface commands (lines

19-45 of column 16); receiving a command (lines 44-60 of column 6); translating the

command to form a translated command, and sending the translated command to the

device (lines 9-18 of column 13); and performing the new translated command within

the internal subnet (lines 19-26 of column 13).

Reshef does not explicitly teach: InfiniBand isolation bridge and InfiniBand host

system. However, Pettey discloses: "In another aspect, it is a feature of the present

invention to provide an Infiniband channel adapter that includes a bus router that

receives an Infiniband RDMA Read Response packet, having a payload of data,

transmitted by a remote Infiniband node," (lines 29-33 of column 3). It would have been

obvious to one of ordinary skill in the art at the time of the applicant's invention to

include an InfiniBand isolation bridge and InfiniBand host system. "The channel adapter

also includes a local bus interface, in communication with the bus router, that provides

the payload of data to an I/O controller coupled to the local bus interface by a local bus

if a local bus address specified by the I/O controller is within a predetermined address

range of the local bus address space," (lines 33-38 of column 3 in Pettey). It is for this

reason that one of ordinary skill in the art at the time of the applicant's invention would

have been motivated to include an InfiniBand isolation bridge and InfiniBand host

system functionality in the system as taught by Reshef.

b.   As per claims 5 and 14, Reshef teaches: initiating a translation mapping,

wherein the translation mapping associates external command addresses with internal

device addresses (line 60 of column 3 through line 3 of column 4); receiving a command

from an external subnet to the internal subnet (lines 44-60 of column 6); translating a

destination local identifier of the command to a destination local identifier for the device

and sending the command to the device associated with the translated address, as

determined by the translation mapping (lines 59-61 of column 1 and lines 9-18 of column 13); and performing the command (lines 19-26 of column 13).

Reshef does not explicitly teach: an InfiniBand translation bridge and InfiniBand host system. However, Pettey discloses: "In another aspect, it is a feature of the present invention to provide an Infiniband channel adapter that includes a bus router that receives an Infiniband RDMA Read Response packet, having a payload of data, transmitted by a remote Infiniband node," (lines 29-33 of column 3). It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to include an InfiniBand isolation bridge and InfiniBand host system. "The channel adapter also includes a local bus interface, in communication with the bus router, that provides the payload of data to an I/O controller coupled to the local bus interface by a local bus if a local bus address specified by the I/O controller is within a predetermined address range of the local bus address space," (lines 33-38 of column 3 in Pettey). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to include an InfiniBand isolation bridge and InfiniBand host system functionality in the system as taught by Reshef.

c.   As per claims 7 and 16, Reshef teaches: the external and internal subnets are comprised of different architectures (lines 24-26 of column 2, lines 20-26 of column 4, and particularly line 61 of column 4 through line 21 of column 7).

6.   Claims 2, 4, 8, 11, 13, and 17 rejected under 35 U.S.C. 103(a) as being

unpatentable over Reshef and Pettey as applied to claims 1, 5, 10, and 14 respectively

above, in view of Catiller et al. (U.S. 4,428,043) hereinafter referred to as Catiller.

        a.   As per claims 2 and 11, Reshef does not explicitly teach: sending a

message to the external subnet indicating a completion status of the command.

However, Catiller discloses: "By using an I/O descriptor command and a data link task

identifier, a main host computer can initiate a network support processor to receive data

from a selected remote terminal or to send data to a selected remote terminal, after

which the network support processor will provide a result descriptor message together

with a task identifier word in order to notify the main system of the completion or

incompletion of that particular task," (lines 12-20 of column 4). It would have been

obvious to one of ordinary skill in the art at the time of the applicant's invention to send

a message to the external subnet indicating a completion status of the command. "The

main host computer operates on a routine whereby I/O commands are conveyed to a

front-end processor for execution after which the front-end processor will return a "result

descriptor" word or words to the main computer in order to indicate completion of the

task or any exception conditions," (lines 10-16 of column 6 in Catiller). It is for this

reason that one of ordinary skill in the art at the time of the applicant's invention would

have been motivated to send a message to the external subnet indicating a completion

status of the command in the system as taught by Reshef and Pettey.

        b.   As per claims 4, 8, 13, and 17, Reshef does not explicitly teach: the

method is performed in an endnode that originated and finally consumes messages in a

system area network. However, Catiller discloses: "By using an I/O descriptor

command and a data link task identifier, a main host computer can initiate a network

support processor to receive data from a selected remote terminal or to send data to a

selected remote terminal, after which the network support processor will provide a result

descriptor message together with a task identifier word in order to notify the main

system of the completion or incompletion of that particular task," (lines 12-20 of column

4). It would have been obvious to one of ordinary skill in the art at the time of the

applicant's invention to have the method performed in an endnode that originates and

finally consumes messages in a system area network. "The main host computer

operates on a routine whereby I/O commands are conveyed to a front-end processor for

execution after which the front-end processor will return a "result descriptor" word or

words to the main computer in order to indicate completion of the task or any exception

conditions," (lines 10-16 of column 6 in Catiller). It is for this reason that one of ordinary

skill in the art at the time of the applicant's invention would have been motivated to have

the method performed in an endnode that originates and finally consumes messages in

a system area network in the system as taught by Reshef and Pettey.

7.   Claims 3, 9, 12, and 18 rejected under 35 U.S.C. 103(a) as being unpatentable

over Reshef and Pettey as applied to claims 1, 5, 10, and 14 respectively above, in view

of Catiller and Nielson et al. (U.S. 5,619,642) hereinafter referred to as Nielson.

        As per claims 3, 9, 12, and 18, Reshef does not explicitly teach: the method is

performed in an endnode that originated and finally consumes messages in a system

area network. However, Catiller discloses: "By using an I/O descriptor command and a data link task identifier, a main host computer can initiate a network support processor to receive data from a selected remote terminal or to send data to a selected remote terminal, after which the network support processor will provide a result descriptor message together with a task identifier word in order to notify the main system of the completion or incompletion of that particular task," (lines 12-20 of column 4). It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to have the method performed in an endnode that originates and finally consumes messages in a system area network. "The main host computer operates on a routine whereby I/O commands are conveyed to a front-end processor for execution after which the front-end processor will return a "result descriptor" word or words to the main computer in order to indicate completion of the task or any exception conditions," (lines 10-16 of column 6 in Catiller). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to have the method performed in an endnode that originates and finally consumes messages in a system area network in the system as taught by Reshef and Pettey.

Reshef does not explicitly teach: the command is a RAID read/write command. However, Nielson discloses: "Under the control of the resident processor (not shown) the bus interface 20a is conditioned to accept RAID commands, e.g. a RAID write request or a RAID read request," (lines 27-30 of column 4). It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to have the command be a RAID read/write command. "The resident processor controls the

components of the RAID controller based on the received request. For example, when a RAID write request is received, the bus interface 20a, and RAM controller 40a are conditioned to accept the received write data, and place it in the main RAM 60 and shadow RAM 80," (lines 30-35 of column 4 in Nielson). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to have the command be a RAID read/write command in the system as taught by Reshef and Pettey.

8.   Claims 6 and 15 rejected under 35 U.S.C. 103(a) as being unpatentable over Reshef and Pettey as applied to claims 5 and 14 respectively above, in view of Nielson.

     As per claims 6 and 15, Reshef does not explicitly teach: the internal device is a RAID storage controller. However, Nielson discloses: "The resident processor controls the components of the RAID controller based on the received request," (lines 30-32 of column 4). It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to utilize a RAID storage controller as an internal device. "For example, when a RAID write request is received, the bus interface 20a, and RAM controller 40a are conditioned to accept the received write data, and place it in the main RAM 60 and shadow RAM 80," (lines 32-35 of column 4 in Nielson). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to utilize a RAID storage controller as an internal device in the system as taught by Reshef and Pettey.

Response to Arguments

9.   Applicant's arguments with respect to claims 1-18 have been considered but are

moot in view of the new ground(s) of rejection.

Conclusion

10.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

        A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

11.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

        Beukema et al. (U.S. 2002/0124148 A1) discloses translation tables in an

InfiniBand system.

Pekkala et al. (U.S. 2002/0172195 A1) discloses protocol translation with InfiniBand systems.

Pettey (U.S. 2003/0014544 A1) discloses InfiniBand TCP/IP translation.

Avery (U.S. 6,611,883 B1) discloses InfiniBand bridge and translation.

Biran et al. (U.S. 6,658,521 B1) discloses address translation on PCI bus over InfiniBand network.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Meucci at (571) 272-3892. The examiner can normally be reached on Monday-Friday from 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell, can be reached at (571) 272-3868. The fax phone number for this Group is 571-273-8300.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [michael.meucci@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published

in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG

89.

Information regarding the status of an application may be obtained from the

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applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free).

BEATRIZ PRIETO
PRIMARY EXAMINER